

GROOTE EYLANDT STUDIES 3. THE INFLUENCE OF DIET ON THE PREVALENCE OF
DENTAL CARIES IN ABORIGINAL CHILDREN AT GROOTE EYLANDT, N.T. AUSTRALIA
1973

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In 1973, epidemiological investigations related to dental caries, caries susceptibility and food purchases were carried out at the C.M.S. Angurugu Mission on Groote Eylandt. Ninety-six children aged 6-14 were examined for the presence of dental caries and then salivary tests were carried out to ascertain individual caries susceptibility. In addition, food purchased at the store by these families (total population approximately 600 individuals) was noted and collated over a five-day period coinciding with the receipt of wages, social service monies and unemployment benefits. There was less than 0.01 ppmF⁻ in the communal water supply.

Dental Carries. The prevalence of decayed, missing and filled teeth in the permanent dentition of children ranging from 6-14 years was 1.5, 2.7, 4.0, 4.1, 5.7, 8.8, 13.5, 8.0, 16.5 (mean values for each age group). Likewise, the prevalence of decayed, missing and filled teeth in the deciduous dentitions for the 6-9 year olds was 13.5, 10.9, 7.4, 4.6 (mean values for each age group). Caries Susceptibility. One ml aliquots of individual saliva samples were plated on Rogosa medium (Rogosa et al. 1951), incubated for three days at 37°C and the numbers of Lactobacilli colonies counted. The caries susceptibility of each child was assessed as NIL (zero counts), MILD (1-300/ml), MODERATE (3000-30000/ml) and SEVERE (in excess of 10⁶/ml). The relative proportions of NIL, MILD, MODERATE and SEVERE susceptibility was 15.6%, 8.3%, 13.6% and 62.5% respectively. Food Purchases. By far the most sought after foods were sugar (947 kg), bread (621.7 kg), apples (108.3 kg), oranges (173.9 kg), flour (159.1 kg), chicken (94.8 kg), meat (87.5 kg) and powdered milk (76.1 kg).

Conclusion. Moody (1960) reported very little dental caries in Groote Eylandt children in 1948. Since that time the Groote Eylanders have fully adopted Western-type foods, with minor exceptions. There is no doubt that the ingestion of refined foods, especially the ingestion of refined sugar has led to a dramatic increase in dental caries. The ingestion of large amounts of refined sugar and other carbohydrates is demonstrated by the Lactobacillus count which is indicative of these practices ie. 76.1% of the children demonstrated moderate and severe caries susceptibility. The most alarming factor is the average amount of sugar purchased annually per person (41.1-82.2 kg) compared to the Australian national average for 1973 (17.4 kg) (Australian Bureau of Statistics 1978-79).

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